ABSTRACT OF THE DISCLOSURE

Output light spectrum P2 (λ) data from an optical amplifier and input light spectrum P1 (λ) data of signal light are prepared, the difference between the P2 (λ) and a value obtained by multiplying the P1 (λ) by a provisional gain GT is determined (Steps S232), for the obtained spectrum data, a noise removing process such as a moving average process and the like is performed and then, a spline interpolation process is also performed, whereby ASE light spectrum P3 (λ) data is prepared and an ASE light level P ASE is determined (Steps S233 through S235). In addition, a noise figure-measuring device 10 calculates the number of channels of WDM light and signal light wavelengths of the respective channels based on the P1 (λ) or P2 (λ), and performs analysis to calculate a noise figure NF and the like of an appointed wavelength range around the center of each wavelength thus calculated.